

REMARKS

Applicants have submitted herewith a Substitute Specification. The Substitute Specification does not contain new matter. A marked-up copy of the original specification showing the matter being added to and deleted from the specification is also submitted herewith.

The Examiner is respectfully requested to approve the Substitute Specification.

Claims 1-4 have been rejected by the Examiner under 35 U.S.C. § 102(b) as being anticipated by Benko (U.S. Patent 4,605,696). Also, claims 1-4 have been rejected by the Examiner under 35 U.S.C. § 102(b) as being anticipated by Davis (U.S. Patent 4,258,770). Finally, claims 1-4 have been rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Nakada (EP 675,161). These rejections are respectfully traversed.

The present invention is directed to a pneumatic tire wherein the belt which is utilized therein comprises a ply of monofilament metallic cords which are rubberized with a topping rubber, the topping rubber including a rubber base, a methylene donor and resorcinol or a resorcinol condensation product.

As the Examiner will note, claim 1 has been amended to recite that the topping rubber includes 30 to 60 parts by weight of carbon black and 0.5 to 5.0 parts by weight of the resorcinol and/or resorcinol condensation product. Also, the content of the methylene donor is stated to be in the range of 0.5 to

2.0 times the total content in parts by weight of the resorcinol and/or resorcinol condensation product. As recited on page 6 of the present application, if the total content of the resorcinol is less than 0.5 parts by weight, the rigidity of the topping rubber cannot be fully increased. On the other hand, if more than 5.0 parts by weight of the resorcinol are present, kneading of the compound materials becomes difficult and adhesion to the cords becomes poor. Also, if the content of the methylene donor is less than 0.5 times the resorcinol content, unreacted resorcinol remains and hinders the adhesion between the rubber and monofilament cords 13.

On the other hand, if more than 2 times of the resorcinol content is present, the unreacted methylene donor remains and again hinders the adhesion between the rubber and the monofilament cords 13. Additionally, if the content of the reinforcements, such as carbon black, is less than 30 parts by weight, it is difficult to obtain the necessary rigidity for improving the steering stability. In addition, if more than 60 parts by weight of the carbon black is present, kneading becomes difficult.

Claim 1 has also been amended to recite the diameter of the monofilament cords and the positioning of the monofilament cords within the crossplys. Thus, claim 1 has been amended to recite a plurality of parameters which are present in specifically recited amounts to obtain a pneumatic tire which is clearly distinguishable over any of the references relied upon by the

Examiner. Thus, the present invention has defined the particular balance of components and properties to achieve a pneumatic tire with improved steering stability, reduced tire weight, and reduced tire costs.

The Benko patent and the Davis patent do not appear to disclose a pneumatic tire having all of the specific features in amounts of various constituents as presently recited in amended claim 1 of the present application.

As the Examiner will note, newly added claims 5-8 have been added to the present application, newly added claims 5 and 6 reciting that the monofilament metallic cords are waved either two-dimensionally or three-dimensionally at a specific wave pitch and a specific wave height. This feature of the present invention is specifically discussed at the bottom of page 4 and the top of page 5 of the present application, and shown in Figures 4A and 4B of the present application. None of the references relied upon by the Examiner, either alone or in combination, suggest the two-dimensionally or three-dimensionally waved configuration of the monofilament cords utilized in the present invention.

Thus, if all of the cords of the two-breaker ply's are straight or unwaved monofilament cords, the rigidity or stiffness of the belt would be increased excessively, and thus, although the steering stability might be improved, the resistance to fatigue, belt durability and ride comfort, tends to deteriorate. In

the case of the use of waved monofilament cords, on the other hand, although there may be some decrease in steering stability, when compared with the unwaved monofilament cords, the other properties of the tire, such as fatigue, belt durability and ride comfort may be increased. Accordingly, according to the present invention, the Applicants have defined a pneumatic tire which exhibits an optimum balance in the desired tire properties, such as steering stability, tire weight, resistance to fatigue, belt durability, ride comfort, and the like.

Accordingly, in view of the above amendments and remarks, reconsideration of the rejections, and allowance of the claims of the present application are respectfully requested.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mr. Joseph A. Kolasch (Reg. No. 22,463) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), the Applicant respectfully petitions for a two (2) month extension of time for filing a response in connection with the present application and the required fee of \$420.00 is attached hereto.

